

Notice of Allowability

Application No.

10/731,172

Examiner

Delma R. Flores Ruiz

Applicant(s)

DAIBER ET AL.

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 03/29/2006.
2. ☒ The allowed claim(s) is/are 1, 2, 4, 6-8 and 12-20.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT-Rule 17.2(a)).
 - * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 1/8/07.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Kevin A. Reif on 01/08/2007.

The application has been amended as follows:

Claim 1, as amended, reads:

1. A tunable laser, comprising: a first tunable element having a corresponding first error signal; a second tunable element having a corresponding second error signal; a controller to linearly relate said first error signal and said second error signal to output a first control signal to control said first tunable element and a second control signal to control said second tunable element and said controller comprises: an input matrix representation of said first and second error signals; an output matrix representation of said first and said second control signals; a coupler matrix to linearly relate said input

matrix to said output matrix and said coupler matrix comprises a plurality of gain coefficients.

Claim 7, as amended, reads:

7. A method for controlling a tunable laser, comprising; representing a plurality of error signals from tunable elements as an input matrix to a controller; representing a plurality of output signals to control said tunable elements as an output matrix; using a coupler matrix to linearly relate said plurality of error signals in said input matrix to said output signals in said output matrix; placing at least one gain coefficient in said coupler matrix; placing a plurality of additive inverse coefficients in said coupler matrix to compensate of difference between first and second filter error signals and using said coupler matrix to lock temperature of said first and second temperature tunable filters to a sled temperature for controlling cavity length.

A claim 3, 5, 9, 10 and 11 has been canceled.

Allowable Subject Matter

Claims 1, 2, 4, 6 – 8 and 12 – 20 are allowed.

The following is an examiner's statement of reasons for allowance: Claim 1 recites a tunable laser structure including the specific structure limitation of *controller to linearly relate said first error signal and second signal and a coupler matrix to linearly said input matrix to said output matrix* which is neither anticipated or disclosed nor suggested in any piece of available prior art, which is neither anticipated nor obvious over the prior art of record.

Claim 7 recites a method for controlling a tunable laser structure including the specific structure limitation of *coupler matrix to linearly relate said plurality of error in said input matrix to said output signals in said output matrix*, which is neither anticipated or disclosed nor suggested in any piece of available prior art, which is neither anticipated nor obvious over the prior art of record.

Claim 16 recites a external cavity tunable laser system structure including the specific structure limitation of a *controller comprising: an input matrix representation of said first filter error signal, said second filter error signal, and said cavity length error signal; an output matrix representation of control signals for said first temperature tunable filter, said second temperature tunable filter, and said temperature controllable sled; and a coupler matrix to linearly relate said plurality of error signals in said input matrix to said output signals in said output matrix*, which is neither anticipated or

disclosed nor suggested in any piece of available prior art, which is neither anticipated nor obvious over the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Delma R. Flores Ruiz whose telephone number is (571) 272-1940. The examiner can normally be reached on M - F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Min Sun Harvey can be reached on (571) -272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



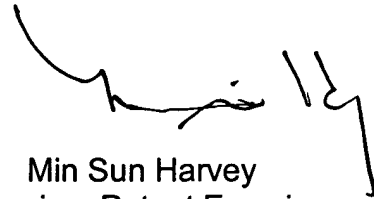
Delma R. Flores Ruiz

Examiner

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DRFR/MH

January 8, 2007



Min Sun Harvey

Supervisor Patent Examiner

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